

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A plasma CVD apparatus comprising:

a vacuum chamber;

~~an exhaust means for exhausting the gas from the vacuum chamber to an outside;~~

[[An]] a first electrode for supplying an electric energy inside the vacuum chamber, the first electrode including a surface in which apertures are formed;

a substrate support configured to support supporting means for supporting a substrate and positioned opposing the surface of the first electrode, wherein [[said]] the substrate support is configured to enable movement of the substrate is moved in a first direction through [[said]] the chamber; and

an introducing port for gas, located between the first electrode and the substrate, wherein [[said]] the introducing port, the substrate support, and the first electrode are arranged relative to one another so that a flow of gas is introduced by the introducing port into [[said]] the chamber in a direction parallel with [[said]] the first direction and so that a flow of said gas is rectified in a direction away from a film formation surface of the substrate and toward the apertures so that the flow of gas does not gradually contain a portion that: (1) flows toward the substrate and (2) includes particles with diameters greater than a thickness of a film to be formed on the substrate;

wherein a plurality of openings are located on a surface of the electrode opposing the substrate;

wherein the gas is exhausted [[from]] through the plurality of openings apertures to [[the]] outside of the vacuum chamber.

2. (Currently Amended) [[An]] The apparatus according to claim 1, further comprising:

a transporting means for transporting continuously a flexible the substrate in [[said]] the first direction.

3. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 1, wherein each of the plurality of ~~openings~~ apertures is circular,

wherein the ~~plurality of openings~~ apertures are located on the surface of the first electrode at constant intervals.

4. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 1, wherein the first electrode is a mesh-like plate.

5. (Cancelled)

6. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 1 further comprising ~~[[:]]~~ a second electrode opposing the first electrode for supplying the electric energy inside the vacuum chamber.

7. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 6, wherein the substrate is supported between the first and second electrodes by the ~~supporting means~~ substrate support.

8. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 2, wherein the transporting means includes at least one selected from the group consisting of an unwinding roll and a winding roll.

9. (Currently Amended) The apparatus according to claim 1 wherein ~~[[said]]~~ the substrate is located horizontally and ~~said~~ has a substrate surface that is downwardly opposed to the first electrode.

10. (Currently Amended) An apparatus comprising:
a chamber;
a first electrode in the chamber;

a second electrode in the chamber, the second electrode including a surface in which apertures are formed;

a substrate holder to hold a substrate between the first and second electrodes wherein ~~[[said]]~~ the substrate is moved in a first direction through ~~[[said]]~~ the chamber;

at least one gas inlet port to introduce a gas to a space between the substrate and the second electrode wherein ~~[[said]]~~ the gas inlet port, the substrate holder, and the second electrode are arranged relative to one another so that a flow of gas is introduced by the gas inlet port in a direction parallel to ~~[[said]]~~ the first direction and so that a flow of said gas is rectified in a direction away from a film formation surface of the substrate and toward the apertures so that the flow of gas does not gradually contain a portion that: (1) flows toward the substrate and (2) includes particles with diameters greater than a thickness of a film to be formed on the substrate, ~~;~~ and

~~a plurality of gas exhaust ports provided in said second electrode through which said gas is exhausted from said space.~~

11. (Currently Amended) The apparatus according to claim 10 wherein ~~[[said]]~~ the first electrode is grounded.

12. (Currently Amended) The apparatus according to claim 10 wherein ~~[[said]]~~ the second electrode is located below ~~[[said]]~~ the first electrode.

13. (Currently Amended) The apparatus according to claim 10 wherein ~~[[said]]~~ the apparatus is a film formation apparatus.

14. (Currently Amended) The apparatus according to claim 10 wherein ~~[[said]]~~ the gas inlet port is located in a position between the substrate and the second electrode.

15-19. (Cancelled)

20. (Currently Amended) The plasma CVD apparatus according to claim 1 further comprising an exhaust port and an abnormal discharge preventing plate between ~~said exhaust means the exhaust port~~ and ~~[[said]] the first~~ electrode wherein ~~[[said]] the~~ abnormal discharge preventing plate has a plurality of openings apertures.

21. (Currently Amended) The ~~plasma CVD~~ apparatus according to claim 10 further comprising an exhaust port and an abnormal discharge preventing plate between ~~[[said]] the~~ second electrode and the exhaust exhausting port of the chamber wherein ~~[[said]] the~~ abnormal discharge preventing plate has a plurality of openings apertures.

22. (Currently Amended) A plasma CVD apparatus comprising:
a vacuum chamber;
~~an exhaust means for exhausting the gas from the vacuum chamber to an outside;~~
an exhaust port;
[[an]] a first electrode for supplying an electric energy inside the vacuum chamber, the first electrode including a surface in which apertures are formed;
a supporting means for supporting a substrate opposing the first electrode wherein ~~[[said]] the~~ substrate is moved in a first direction through ~~[[said]] the~~ chamber;
an introducing port for gas, located between the first electrode and the substrate, wherein ~~[[said]] the~~ introducing port, the supporting means, and the first electrode are arranged relative to one another so that a flow of gas is introduced by the introducing port into ~~[[said]] the~~ chamber in a direction parallel with ~~[[said]] the~~ first direction and is rectified in a direction away from a film formation surface of the substrate and toward the apertures so that the flow of gas does not gradually contain a portion that: (1) flows toward the substrate and (2) includes particles with diameters greater than a thickness of a film to be formed on the substrate; and
an abnormal discharge preventing plate between ~~said exhaust means the exhaust port~~ and ~~[[said]] the first~~ electrode wherein ~~[[said]] the~~ abnormal discharge preventing plate has a plurality of openings apertures,
wherein a plurality of openings are located on a surface of the electrode opposing the substrate;

wherein the gas is exhausted ~~[[from]]~~ through the plurality of openings ~~apertures of~~ ~~[[said]]~~ the first electrode and the plurality of ~~openings~~ ~~apertures of~~ ~~[[said]]~~ the abnormal discharge preventing plate to ~~[[the]]~~ outside of the vacuum chamber.

23. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 22, further comprising ~~[[:]~~ a transporting means for transporting continuously the substrate in ~~[[said]]~~ the first direction.

24. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 22, wherein each of the ~~plurality of openings~~ ~~apertures of the first electrode~~ is circular, and wherein the ~~plurality of openings~~ ~~apertures~~ are located on the surface of the first electrode at constant intervals.

25. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 22, wherein the first electrode is a mesh-like plate.

26. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 22 further comprising ~~[[:]~~ a second electrode opposing the first electrode for supplying the electric energy inside the vacuum chamber.

27. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 26, wherein the substrate is supported between the first and second electrodes by the supporting means.

28. (Currently Amended) ~~[[An]]~~ The apparatus according to claim 23, wherein the transporting means includes at least one selected from the group consisting of an unwinding roll and a winding roll.

29. (Currently Amended) The apparatus according to claim 22 wherein ~~[[said]]~~ the substrate is located horizontally and has a substrate surface that is downwardly opposed to the first electrode.

30. (Currently Amended) An apparatus comprising:

a chamber;

a first electrode in the chamber;

a second electrode in the chamber, the second electrode including a surface in which apertures are formed;

a substrate holder to hold a substrate between the first and second electrode wherein ~~[[said]]~~ the substrate is moved in a first direction through ~~[[said]]~~ the chamber,

at least one gas inlet port to introduce a gas to a space between the substrate and the second electrode wherein ~~[[said]]~~ the gas inlet port, the substrate holder, and the second electrode are arranged relative to one another so that a flow of gas is introduced by the gas inlet port in a direction parallel to ~~[[said]]~~ the first direction and is rectified in a direction away from a film formation surface of the substrate and toward the apertures so that the flow of gas does not gradually contain a portion that: (1) flows toward the substrate and (2) includes particles with diameters greater than a thickness of a film to be formed on the substrate; and

~~a plurality of gas exhaust ports provided in said second electrode through which gas is exhausted from said space; and~~

an abnormal discharge preventing plate between ~~[[said]]~~ the second electrode and ~~exhausting port~~ an exhaust port of the chamber wherein ~~[[said]]~~ the abnormal discharge preventing plate has a plurality of ~~openings~~ apertures,

wherein ~~[[said]]~~ the gas is exhausted through the plurality of ~~openings~~ apertures of ~~[[said]]~~ the abnormal discharge preventing plate.

31. (Currently Amended) The apparatus according to claim 30 wherein ~~[[said]]~~ the first electrode is grounded.

32. (Currently Amended) The apparatus according to claim 30 wherein ~~[[said]]~~ the second electrode is located below ~~[[said]]~~ the first electrode.

33. (Currently Amended) The apparatus according to claim 30 wherein ~~[[said]]~~ the apparatus is a film formation apparatus.

34. (Currently Amended) The apparatus according to claim 30 wherein the gas inlet port is located in a position between the substrate and the second electrode.

35. (New) The apparatus according to claim 10, further comprising a third electrode surrounding the space and the second electrode,
wherein the third electrode has an opening,
wherein the gas is exhausted from the space through the apertures and the opening of the third electrode.

36. (New) The apparatus according to claim 30, further comprising a third electrode surrounding the space and the second electrode,
wherein the third electrode has an opening,
wherein the gas is exhausted from the space through the apertures of the second electrode, the plurality of apertures of the abnormal discharge preventing plate, and the opening of the third electrode.